

The scorpions did not use their stings or tails for any purpose whatsoever—these were well curled over their backs, but their claws in front were constantly spread out to catch and embrace all that came within striking distance.

I also noticed that there were many Santal and Kol women willing to kill the scorpions, and collect them—if allowed by me—as they said a good oil, useful to be rubbed on for aches and pains in joints, could be extracted from their bodies. I preferred, however, watching these dreaded insects at their shikar game to seeing them killed—and all one heard when the nest was once more normal and showed no signs of life was “Bab-ra-bab-kitta bichoo”—“My father, how many scorpions,”—and that was all one could say—for never have I seen so many scorpions in one particular spot.

Evidently the sandy yellow clay soil, and also the lateritic soil all round here, harbours hundreds of scorpions, centipedes and snakes, as I have come across more than one usually sees elsewhere in India.

The Indians of these parts, who were watching the nest with me, stated that it was the turn of the scorpion now, as he was eating the white ants, but a time would come when the white ants would cluster all round and eat the scorpion, and that it was usual for this to happen, but I have no convincing evidence.

C. H. DRACOTT.

JAMSHEDPUR, 24th June 1919.

No. XL.—NOTES ON SOME NEW AND OTHER INDIAN
DRAGONFLIES.

ÆSCHNIDÆ.

Subfamily ÆSCHNINÆ.

1. *Hemianax ephippiger*, Morton, Trans. Ent. Soc., London, 1907.

The breeding places of this insect in India are small tanks and reservoirs, usually of considerable depth and rich in water weed. The greater number emerge as the imago, during the month of April. I noticed over one hundred exuvæ clinging to a small tuft of reeds in a tank at Poona, the tank measuring only about 15 feet either way and its waters swarming with the full grown larvæ. A large number of these were collected and emerged in the next few days, the greater number being males.

There were a few isolated specimens of *Anax guttatus* amongst them.

Females of these dragonflies are rarely seen on the wing and are much more easily obtained by breeding out the larvæ. It is quite easy to distinguish the sexes in the last instar of the larvæ as development of the genital organs is well advanced and moulded on the ventral plates of the abdomen. The females may be picked out and males, if not wanted, can be restored to their watery habitat. Another advantage of this method is that teneral specimens have the gut and ovaries empty and so no decomposition goes on after death and the colours do not fade. Colour develops very rapidly in the Æschnidæ, the species quoted above emerging at about 11 o'clock at night and having a good display of colour by the hour of dawn. Even before they emerge from the pupa case, the colour of the insect may be seen showing through, especially the blue at the proximal end of the abdomen. I found that the percentage of exuvæ worked out as 2 to 1, male and female respectively, so that the scarcity of females is real and not apparent.

2. *Orogomphus xantheptera*, sp. nov.

1 ♀, Madura District, South India, Mr. Prater, 1917. Type specimen in the Bombay Natural History Museum.

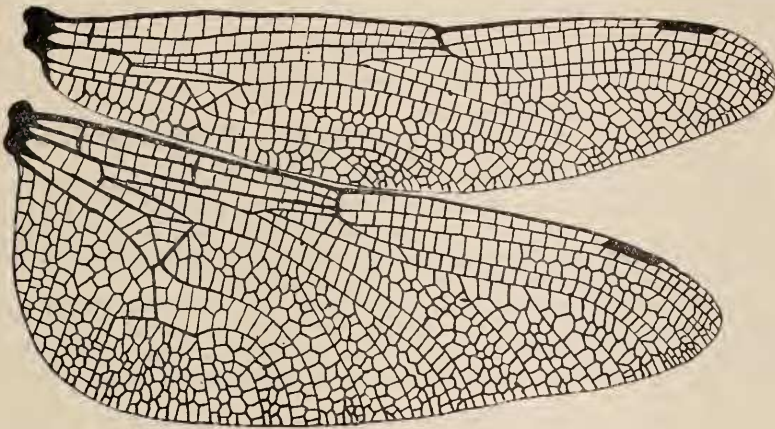
MISCELLANEOUS NOTES.

Length of hindwing 56 mm. Length of abdomen 54 mm. Breadth of hindwing 20.5 mm.

Head very broad, frons much elevated, considerably higher than the occiput and with a broad, diffuse brownish black, basal line, rest of frons, face, labrum and labium bright yellow, occiput black, fringed with stout, yellow hairs.

Prothorax very small and tucked away out of sight beneath the head.

Thorax cubical, relatively small, brownish black with yellow markings, as follows:—a narrow, humeral streak, angulated inwards above and then turning downwards parallel to the dorsal carina for a short distance, a broad lateral fascia under the forewing and another on the posterior part of the metepimeron.



Wings deeply and evenly saffronated throughout the whole of their extent although there is some hyaline cellular mottling. Stigma black.

Antenodals $\frac{2}{13}$, postnodals $\frac{1}{6}$, median nervures $\frac{4}{3}$, cubital nervures $\frac{2}{2}$, triangular cells $\frac{2}{2}$, hypertrigonals cells $\frac{2}{2}$, anal loop 22 cells, squarish and consisting of an outer and an inner circle of cells.

Abdomen: 1st and 2nd segments dilated, 3 to 6 narrow, 7 broadening apically, 8 and 9 dilated and then tapering to the 10th which is small. Black marked with yellow as follows:—1st segment with a somewhat triangular patch on the dorsum and the side broadly yellow, the marking here, broadening proximally; 2nd segment with small transverse lunules on the dorsum, proximal border and the side broadly, the marking here, narrowing proximally, 3rd segment with similar markings; 4th to 7th with dorsal lunules only; the remaining segments unmarked but the lunules may have become obscured through decomposition.

Legs black. Anal appendages small, black. Vulvar scale broad and depressed, slightly overlapping the 9th ventral plate.

3. *Macrogomphus annulatus*, de Selys.

1 ♂ and 1 ♀ apparently taken *in cop.* Madura District, 1917. Mr. Prater.

Length of abdomen 50 to 52 mm. Length of hindwing 38 to 40 mm.

These two very rare insects are in a well-preserved condition and correspond closely to type. The superior anal appendages are creamy white,

nearly evenly forked and with a small ventral tooth; inferior appendages black; both pairs evenly and widely divergent. The oreillets of the female are about half the size those of the male.

This pair of insects are in the collection of the Bombay Natural History Museum.

LIBELLULIDÆ.

Subfamily LIBELLULINÆ.

4. *Diplacodes parvula*, Rambur, 1842.

This insect is very closely related to *D. nebulosa*, differing from it by possessing a blackish basal spot to the hindwing and by not possessing apical markings. It almost entirely replaces *D. trivialis* in Mesopotamia and in part at least, in N. W. India. The insect is fairly common in Karachi.

AGRIONIDÆ.

Subfamily PROTONEURINÆ.

5. *Disparoneura fletcheri*, sp. nov.

2 ♂♂, and 2 ♀♀. Shillong, September 1918. T. Bainbrigg Fletcher.

Length of hindwing 23 mm. Length of abdomen 31 mm.

Male: Head, eyes reddish brown above, paler beneath, an equatorial, brown line separating the two coloured areas, labrum rust red, with a row of small black spots along its border, rest of head black marked with a broadish rust red band crossing between the anterior part of the eyes and two obscure spots on the outer side of the lateral ocelli.

Prothorax black marked with longitudinal, red, subdorsal stripes and with a minute dorsal, geminate spot on the mid-lobe and a single, tiny spot on the dorsum of the posterior lobe. Lateral border of middle lobe, narrowly red and two minute red spots on the posterior border of the posterior lobe.

Thorax rust red on the dorsum, fading to a pale fleshy tint laterally. Marked very irregularly and variably with black as follows:—a broad, middorsal band, another broad, subdorsal band, incomplete above and behind where the ground colour invades it irregularly. A line on the 2nd lateral suture, split more or less longitudinally and irregularly and an elongate spot on the metepimeron. Tergum mottled with rust red.

Abdomen black marked with red or wedgewood blue. The apical border of the first segment red; a longitudinal, fine red line on the dorsum of the second segment; 2 subdorsal lunules on the apical borders of segments 3 to 7. Obscure reddish or bluish spots on the sides of segments 3 to 6. The sides of the first and second segments red or purplish.

In some specimens the ground colour or markings are entirely wedgewood blue but they do not appear to be more adult than the red-marked ones, in which, especially on the head, the red is of a very intense character.

Legs black, base of femora and extensor surfaces of tibiæ rust red.

Anal appendages of the usual disparoneurine shape, the superior with pointed apices and a robust ventral spine and the inferior sloping and tapering ventrally and rather longer than the superior.

Wings distinctly tinted, especially along the costa and apices; stigma crimson, the hinder border paler.

Female similar to the male, the markings being rather more defined and very irregular.

6. *Caconeura mackwoodi*, sp. nov.

1 ♂ Dyatalawa, 5,000 feet, Ceylon. September 1916.

Length of hindwing 21 mm. Length of abdomen 32 mm.

Head jet black with a purple sheen.

Prothorax and thorax jet black, the dorsum a deep metallic purple; on the sides of thorax, two dirty yellow, narrow lines, starting from the middle and hind coxæ respectively.

Abdomen deep black, no markings.

Anal appendages strongly resembling those of a *Disparoneura*. The superior with a robust ventral tooth, the inferior directed ventrally, tapering to the end, somewhat broad at the base and slightly upturned at the extremities.

Wings: stigma black, strongly braced; 17 postnodals in the forewing, 15 in the hind, *ab* fails for a short distance, to meet Cu_2b in all four wings, Cu_2 less than half the wing length.

I took this solitary specimen in a dark, rocky gorge occupied by a mountain torrent and only secured it after a rather perilous climb, which I should not have attempted unless I had previously spotted the insect from above with field-glasses. I find this instrument as valuable to the odontologist as to the hunter after more noble game, both for the purposes of detection and observation.

7. *Caconeura canningi*, sp. nov.

1 ♂ Coonor, 6,000 feet, Nilgiri Hills, May 1917.

Length of hindwing 20 mm. Length of abdomen 32 mm.

Head velvety black, no markings.

Prothorax black, no markings.

Thorax black with a posthumeral, yellow line on each side and an incomplete, similar coloured line starting from the hind coxa and not reaching the metepimeron. Ventral surface pruinose. Legs black.

Abdomen black. Minute white lunules at the basal ends of segments 3 to 6; a fine, white, dorsal line on the 2nd segment; a similar coloured ring to the first segment and obscure lateral spots on the distal third of segments 3 to 7.

Anal appendages very similar to the last.

Wings: stigma black, covering not quite, I cell, its costals de longe than the posterior, postnodals 15 in the forewing, 13 in the hind, only a vestige of *ab* present, almost absent in the hind wings, Cu_2 not half the wing length.

Subfamily AGRIONINÆ.

8. *Enallagma assamica*, sp. nov.

Several ♂♂ and ♀♀. Shillong, Assam, T. Bainbrigge Fletcher. 26th October 1918.

Length of hindwing 17 mm. Length of abdomen 24 mm.

Head: eyes bottle green at the sides, paler beneath, black above; post-ocular spots blue and joined across the occiput by a line of the same colour; labrum pale blue, black at the base; rhinarium blue, with a black spot above; a pale blue line crossing the frons between the eyes in front of vesicles.

Prothorax black, the sides pruinose.

Thorax black on the dorsum, pruinose on the sides, marked with fine, blue, humeral lines. Legs whitish, the femora streaked with black on the extensor surfaces.

Abdomen very attenuated as far as the 7th segment and then expanding gradually to the 10th. Pale greenish-blue except segments 8 and 9 which are a deep sky-blue with no markings, the row of spines on the proximal border of these two segments being blue also; broad, dorsal, black markings on all segments except 8 and 9, the markings expanding proximally on each

segment and tapering very slightly apically. Black annules at the junctions of each segment, connected with the dorsal black markings. Usually pale blue annules at the proximal borders of segments 1 and 2.

Anal appendages nearly as long as the 10th segment, concave internally, bifid at the end very much as in *P. decorum*. The inferior small and whitish.

Female somewhat similar to the male but paler in colour. The black markings slightly more extensive and involving the dorsal surfaces of segments 8 and 9 also. 10th segment pale blue instead of black as in the male. Ground colour more green than blue and the sides of thorax not pruinose. The black on the upper surface of the eyes is sharply limited and the sides and under surface are a paler green. There is also a pale brown, equatorial line running through the pale area.

The legs yellowish at their bases.

Wings: stigma dark brown, unicolourous; *ab* commences at the level of *ac* as in true *Pseudagrion* and the female has a ventral spine on the 8th segment.

F. C. FRASER, MAJOR, I.M.S.

BOMBAY.

No. XLI.—ANTS ATTACKING BEES.

I am not a member of your Society; though I have often thought I should like to be, but venture to write and inquire as to whether an attack by red ants (Burmese Kagyin, I don't know their scientific name) on bees has ever been recorded? There are numerous colonies of these red ants round our house here. They have their nests in almost every tree. Yesterday, on my return from office, my wife mentioned that a column of red ants had come into the house and was disappearing through the bed room window in the direction of a bee hive, which has recently been established under the eaves, and we wondered seriously as to whether the ants were after honey. At night when we went to bed we heard an excited buzzing from the hive which astonished us, at such a time of night (10 p.m.). We investigated with electric torches and found a dense double column carrying dead adult bees. When we woke in the morning the buzzing was still going on, but there was a small volume of it. On investigating again we found the grewsome procession of corpses was still pouring down the window still and out unto the wall outside, bees were buzzing about while a number were hanging to the window curtains as if exhausted. These were being hunted up by the ants and we noticed that whenever a bee still on the wing approached the marching column the ants did their best to get hold of it while every now and then when a bee flew within reach it was seized and appeared to be instantly killed. Eventually a servant knocked down the hive and in a short while the remnant of the bees flew away and are now clustered on a croton column in the garden. I believe if the hive had not been knocked down every bee would have been killed. What astonished us was that the bees appeared to be able to put up no sort of fight. I noticed one or two dead ants being carried which looked as if perhaps a bee sometimes was able to make use of its sting. The ants are of the variety, about $\frac{1}{2}$ " long, which cocks its "tail" and makes war like demonstration when you put your finger near it. They are fond of crowding into a garden gate awaiting nervous people about to open it.

A. G. H. BREITHAAPT.

SANDOWAY, ARAKAN COAST,
13th March 1919.